

CLAIMS

1. An adapter comprising attachment and connection means to establish both physical fit and flow connection between:

- a container with one drain opening, otherwise closed - and being substantially rigid,
- an at least occasionally liquid demanding device, where the attachment means have one attachment port for sealing connection to the drain opening of at least one such detachable and possibly replaceable container with properties to the surroundings, and
- a valve being placed in fluid connection with the flow-passage between the attachment port and the connection means for the liquid demanding device for automatically pressure equalizing the inside container in relation to the surrounding pressure substantially simultaneously with the devices' draining of liquid from a such attached container, respectively,

characterized in,

- the attachment means (2) at the attachment port (3) being configured to keep a presently utilized container (4) by means of a sealing attack in the drain opening (5) outlet area (6),
- the connection means (7) being shaped as a connection port (8) having externally a substantially prismatic or cylindrical (10) form, which fits in a corresponding shaped deep hole in the device (9), wherein after a certain – substantially translatoric – mutual telescoping of the prism or cylinder (10) and the deep hole, a sealing to the prism or cylinder's surface between the interior of the deep hole and the surroundings is established by sealing means,
- a spring biased take-out valve (11) being provided in the flow direction in the connection port (8) of the adapter (1), being opened by means in the device (9) after the sealing to the prism or cylinder (10) has been established; and that, conversely, the take-out valve (11) being closed during and at least briefly after invalidation of the sealing to the prism or cylinder (10) between the surroundings and the deep hole at mutual separation of the adapter (1) and the device (9).

2. An adapter according to claim 1, **characterized in,**

the sealing attack of the attachment means in the outlet (6) of the container (4) resulting in a mutual cohesive force, which is distinctively superior to the force produced by the sealing or positioning to the prism or cylinder (10), regardless of actual size of the container, and actual quantity and type of liquid present inside the container, resulting in, that said adapter (1) correctly mounted according to a directions, will stay connected to the container (4) in the case of the adapter's removal from the device (9) by force influenced on the container (4).

3. An adapter according claim 1 or 2, **characterized in**, the attachment means (2) having contact with the drain opening (5) wall consists of an elastomer (12).

4. An adapter according to any one or more of the previous claims, **characterized in**, that the attachment means (2) for contact in the outlet area (6) are shaped as an overall truncated cone (13) pointing in the liquid upstream direction.

5. An adapter according to claim 4, **characterized in**, the overall truncated cone (13) detailed having a towards the tapered end constantly stepped form substantially shaped as successively alternating adjacently placed circumferential ribs (14) and grooves (15) with constantly decreasing respective characterizing diameter to the tapered end.

6. An adapter according to any one or more of the previous claims, **characterized in**, the flow conduit of the pressure equalizing valve (16) joining to the flow passage immediately upstream of the take-out valve (11).

7. An adapter according to any one or more of the previous claims, **characterized in**, the valve part (17) of the pressure equalizing valve (16) being biased in the cut-off position by a flexible, preferably elastic, biasing force so small, that the pressure equalizing valve can open for pressure compensation with the fluid level being on level with the free surface of the attachment means in the outlet (6).

8. An adapter according to any one or more of the previous claims, **characterized in**, the means of the device (9) for opening of the take-out valve (11) is being controllable.

9. An adapter according to any one or more of the previous claims – at least claim 3, **characterized in**, the elastomer (12) of the attachment means being shaped as a sleeve (18), which is mounted on a supporting, preferably tubular, structure (19) of the adapter body (20).

10. An adapter according to any one or more of the previous claims, **characterized in**, the body (20) of the adapter (1) is shaped by moulding, preferably by injection moulding.

11. An adapter according to any one or more of the previous claims, **characterized in**, the adapter's (1) flow passage from the container (4) to the device (9) being substantially linear.

12. An adapter according to any one or more of the previous claims, **characterized in**, the attachment means (2) being designed for attack of the actually utilized container (4) exclusively in the outlet (6).

13. Use of an adapter according to any one or more of the previous claims, **characterized in**,
5 the liquid being drinkable water, preferably mineral drinking water.

14. Use of an adapter according to any one or more of the previous claims, **characterized in**, the container (4) being a bottle, preferably of transparent plastic material, preferably approved for use with human food.

15. Use of an adapter according to any one or more of the previous claims, **characterized in**,
10 the device (9) being an espresso machine, preferably designed as a domestic appliance.